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**Bezpieczeństwo,  
Efektywność,  
Optymalizacja**





# H3C IE4320 Series Rackmount Industrial Switches

Release Date: April, 2023



New H3C Technologies Co., Limited

## Product Overview

H3C Industrial Ethernet 4320 switch series is H3C's latest industrial Ethernet switches designed for rugged environment and wide operating temperature. IE4300 industrial switch series use the new H3C independent intellectual property operating system Comware V7, while ensuring rich software features, it further provides powerful hardware protection capabilities, which can work for a long time in the harsh environment of -40°C~85°C, it has IP40 protection level and no fan cooling performance.

H3C IE4320 industry switches series includes the following models:

- IE4320-28S: 24x10/100/1000BASE-T Ethernet ports (8 combo ports), 4x10G BASE-X SFP+ ports, AC+AC;
- IE4320-28S-HPWR: 24x10/100/1000BASE-T Ethernet ports (16 ports support PoE+, 8 ports support PoE++), 4x10G BASE-X SFP+ ports, DC+DC;



IE4320-28S



IE4320-28S-HPWR

## Features

### Intelligent Resilient Framework 2 (IRF2)

H3C IE4320 series industrial switches support IRF2 (Second Generation Intelligent Resilient Architecture) technology, which connects multiple physical devices to each other, making it virtual as a logical device, that is, users can regard these multiple devices as a single device manage and use. IE4320 series switches can not only perform virtualization through 10G optical interfaces, but also can be virtualized through the gigabit

optical port and the gigabit electrical port, and the IRF2 function can be realized through the network cable. IRF2 provides the following benefit:

- **Simplify management:** After the IRF architecture is formed, it can be connected to any port of any device to log in to a unified logical device. By configuring a single device, the entire intelligent elastic system and all member devices in the system can be managed without physical connection. Configure and manage them separately on each member device.
- **Simplify business:** The various control protocols running in the logical device formed by IRF are also run as a single device. For example, the routing protocol will be calculated as a single device. With the application of the cross-device link aggregation technology, it can replace the original spanning tree protocol, which saves the interaction of a large number of protocol packets between devices, simplifies network operation, and shortens the convergence time when the network is turbulent.
- **High performance:** For Ethernet switches, the improvement in performance and port density is limited by the hardware structure. The performance and port density of an IRF system is the sum of the performance and port numbers of all devices inside the IRF. Therefore, IRF technology can easily expand the switching capability of the device and the density of user ports several times, thereby greatly improving the performance of the device.
- **High reliability:** The high reliability of IRF is reflected in three aspects: link, equipment and protocol. The physical ports between the member devices support the aggregation function, and the physical connections between the IRF system and the upper- and lower-layer devices also support the aggregation function, which improves the reliability of the link through multi-link backup; the IRF system consists of multiple member devices. Once the master device fails, the system will quickly and automatically elect a new master to ensure uninterrupted services through the system, thus achieving device-level 1:N backup; the IRF system will have a real-time protocol hot backup function responsible for the configuration information of the protocol. Backup to all other member devices to achieve 1:N protocol reliability.

## Smart Management Center (SmartMC)

SmartMC is H3C's latest offering and innovation that helps small and middle size enterprise network to address management issue and is free of charge, easy to use web management tool. SmartMC is embedded network management tool into the switch, it includes commander switches and other access switches.

SmartMC delivers the following benefits:

- **Intelligent operation:** once the switch is powered on and SmartMC function is enabled, topology will be created automatically and user can go enhanced web GUI to check the latest status.
- **Centralized management:** all management can be achieved via commander switch such as centralized configuration backup, and software version management, increasing working efficiency.

- **Intelligent business:** Mainly includes user management, etc.: After network access users are created and successfully activated, these users can access the SmartMC network through the one-key-armed port.

H3C IE4320 series industrial switches can be used as managed devices of SmartMC and connected to the SmartMC network as managed devices, enabling easy maintenance

### Support IEEE1588v2 protocol

IEEE 1588v2 is a master-slave synchronization system. During the synchronization process of the system, the master clock periodically publishes the PTP time synchronization protocol and time information, and the slave clock port receives the time stamp information sent by the master clock port, and the system calculates the master clock accordingly. Slave line time delay and master-slave time difference, and use the time difference to adjust the local time to keep the slave device time

Frequency and phase coincident with master time. IEEE1588v2 can realize frequency synchronization and time synchronization at the same time. The accuracy of time transfer mainly depends on the accuracy of the two condition counters and the symmetry of the link. Compared with traditional timing technology, IEEE1588v2 has obvious advantages. It adopts two-way channel, the precision is ns level, the cost is low, and it can adapt to different access environments and so on. Under the background of the industry that requires increasing precision, IEEE 1588v2 has become an inevitable trend of development.

### High availability

H3C IE4320 series industrial switches have multiple reliability protections at the device level and link level. It adopts a fanless heat dissipation energy circuit design, and through multiple heat dissipation structures such as built-in heat sinks and heat dissipation guides, it can perform consistently in various harsh environments, and the operating temperature range can reach -40°C~85°C. It supports lightning protection and can adapt to a variety of outdoor harsh environments.

Apart from device level redundancy, The IE4320 series switch also provides diverse link redundancy support such as LACP/STP/RSTP/MSTP/Smart Link protocols. It supports IRF2 and 1: N redundancy backup as well as cross-device link aggregation which substantially increases network reliability.

### Abundant QoS

The IE4320 switch series supports packet filtering at Layer 2 through Layer 4, and traffic classification based on source MAC addresses, destination MAC addresses, source IP addresses, destination IP addresses, TCP/UDP port numbers, protocol types, and VLANs. It supports flexible queue scheduling algorithms based on ports and queues, including strict priority (SP), weighted round Robin (WRR) and SP+WRR. The IE4320 switch series enables committed access rate (CAR). It supports port mirroring in the outbound and inbound directions, to monitor the packets on the specific ports, and to mirror the packets to the monitor port for network detection and troubleshooting.

## Excellent manageability

H3C IE4320 switch series makes switch management with ease with the support of SNMPv1/v2/v3, which can be managed by NM platforms, such as Open View and iMC. With CLI and Telnet switch management is made easier. And with SSH 2.0 encryption, switch management security is enhanced.

H3C IE4320 series industrial switches support VLAN division based on MAC address, which solves the intelligent and flexible management of mobile office. Combined with the unique global and VLAN-based ACL distribution policy, it simplifies user configuration and greatly saves hardware resources.

## Green design

H3C IE4320 series industrial switches adopt new energy-saving chips and innovative architecture design solutions to achieve low power consumption of gigabit switches, bring users green, environmentally friendly and energy-saving new network access products, and reduce user maintenance costs. At the same time, H3C IE4320 series industrial switches adopt a variety of green energy-saving designs, including auto-power-down (port automatic energy-saving). If the interface status is always down for a period, the system will automatically stop power supply to the interface and automatically enter the energy-saving mode; Supports EEE energy saving function. If the port is idle for a period, the system will set the port to the energy saving mode. When there is a packet to be sent and received, it will wake up the port to resume services through the monitoring stream sent regularly to achieve the effect of energy saving.

H3C IE4320 series industrial switches adopt a shallow body with a combo port design, and the power does not exceed 30W under normal working conditions, which is suitable for more scenarios.

## Hardware Specifications

Feature	IE4320-28S	IE4320-28S-HPWR
Port Switching capacity	128Gbps	128Gbps
Box Switching capacity	336Gbps	
Forwarding capacity	96 Mpps	96 Mpps
CPU	1 Core, 800MHz	
Dimensions (W×D×H)	440*260*43.6 mm	440*260*43.6
Weight	≤4 kg	≤4 kg
10/100/1000Base-T port	24(8 combo)	24(16 PoE+, 8PoE++)
SFP+ port	4	4
Maximum Stacking bandwidth	16Gbps	

Feature	IE4320-28S	IE4320-28S-HPWR
Maximum stacking num	9	
Input voltage	Dual-AC Rated: 100 VAC to 240 VAC @ 50 Hz/60 Hz Max.: 90 VAC to 264 VAC @ 47 Hz to 63 Hz	Dual-DC: Rated: 54V~57V Max.: 54V~57V
Flash/SDRAM	256MB/512MB	
Power consumption (full configuration)	Single AC: Min: 14W Max: 30W Dual AC: Min: 15W Max: 31W	Single DC: Min: 17W Max: 198W(PoE: 160W) Dual DC: Min: 19W Max: 415W(PoE: 360W)
Operating temperature	-40°C ~85°C	
Storage temperature	-40°C ~85°C	
Operating & storage relative humidity(noncondensing)	5%~95%	

## Software Specifications

Feature	IE4320 switch series
Port aggregation	GE/10GE port aggregation Dynamic aggregation Static aggregation Cross-device aggregation
Broadcast/Multicast/Unicast storm suppression	Storm suppression based on port bandwidth percentage Storm suppression based on PPS Storm suppression based on BPS Broadcast traffic/Multicast traffic/Unknown unicast traffic suppression
IRF2	Distributed device management, distributed link aggregation, and distributed resilient routing Stacking through standard Ethernet interfaces

Feature	IE4320 switch series
	Local device stacking and remote device stacking
Jumbo Frame	10000 bytes
MAC address table	16K MAC address entries Static MAC address Blackhole MAC address
VLAN	Port-based VLAN (up to 4K VLANs) MAC-based VLAN Protocol-based VLAN QinQ and selective QinQ VLAN mapping Voice VLAN GVRP
DHCP	DHCP Client DHCP Snooping DHCP Snooping option82 DHCP Relay DHCP Server DHCP auto-config
IP routing	1K IPv4 routing table Static routing RIPv1/v2 and RIPng OSPFv1/v2 and OSPFv3
Multicast	IGMP Snooping V2/V3 MLD Snooping Multicast VLAN
Layer 2 ring network protocol	STP/RSTP/MSTP/PVST Smart Link RRPP G.8032 ERPS (Ethernet Ring Protection Switching)
ACL	Packet filtering at Layer 2 through layer 4 Traffic classification based on source MAC addresses, destination MAC addresses, source IPv4/IPv6 addresses, Time range-based ACL VLAN-based ACL



Feature	IE4320 switch series
	Bidirectional ACL
QoS	Port rate limit (receiving and transmitting) Packet redirection Committed access rate (CAR) Eight output queues on each port Flexible queue scheduling algorithms based on ports and queues, including SP, WRR and SP+WRR 802.1p DSCP remarking
Mirroring	Port mirroring RSPAN
Security	Hierarchical user management and password protection AAA authentication support RADIUS authentication HWTACACS SSH2.0 Port isolation 802.1X authentication, centralized MAC authentication Port security IP Source Guard HTTPs EAD
IEEE	IEEE 802.3x IEEE 802.3u, IEEE 802.3z, IEEE 802.3az, IEEE 802.3ab, IEEE 802.3ah IEEE 802.3ad IEEE 802.3af IEEE 802.3at IEEE 802.3bt IEEE 802.3bz IEEE 802.1p IEEE 802.1x

Feature	IE4320 switch series
	IEEE 802.1q IEEE 802.1d IEEE 802.1w IEEE 802.1s IEEE 802.1ax IEEE 802.1ag
Management and maintenance	Loading and upgrading through XModem/FTP/TFTP Configuration through CLI, Telnet, and console port SNMPv1/v2/v3 and Web-based NMS Remote monitoring (RMON ) alarm, event, and history recording IMC NMS System log, alarming based on severities, and output of debugging information NTP Ping, Tracert Virtual cable test (VCT) Device link detection protocol (DLDP) Loopback-detection
EMC	FCC Part 15 Subpart B CLASS A ICES-003 CLASS A VCCI-CISPR 32 CLASS A EN 55032 CLASS AS/NZS CISPR32 CLASS A CISPR 24 EN 55024 EN 61000-3-2 EN 61000-3-3 ETSI EN 300 386 GB/T 9254 YD/T 993
Safety	CAN/CSA C22.2 No 60950-1 IEC 60950-1 EN 60950-1 AS/NZS 60950-1 FDA 21 CFR Subchapter J

Feature	IE4320 switch series
	GB 4943.1

## Ordering Information

Product ID	Product Description
LS-IE4320-28S	H3C IE4320-28S L2 Industrial Ethernet Switch with 24*10/100/1000BASE-T Ports,8*100/1000BASE-X SFP Combo Ports and 4*1G/10GBASE-X SFP Plus Ports,(AC)
LS-IE4320-28S-HPWR	H3C IE4320-28S-HPWR L2 Industrial Ethernet Switch with 8*10/100/1000BASE-T PoE+ Ports,16*10/100/1000BASE-T PoE+ Ports and 4*1G/10GBASE-X SFP Plus Ports,Without Power Supplies
DG-240-55	H3C 150W Power Supply for Industrial Ethernet Switch
SFP-GE-T	1000BASE-T SFP
SFP-GE-SX-MM850-A	1000BASE-SX SFP Transceiver, Multi-Mode (850nm, 550m, LC)
SFP-GE-LX-SM1310-A	1000BASE-LX SFP Transceiver, Single Mode (1310nm, 10km, LC)
SFP-GE-LH40-SM1310	1000BASE-LH40 SFP Transceiver, Single Mode (1310nm, 40km, LC)
SFP-GE-LH40-SM1550	1000BASE-LH40 SFP Transceiver, Single Mode (1550nm, 40km, LC)
SFP-GE-LH80-SM1550	1000BASE-LH80 SFP Transceiver, Single Mode (1550nm, 80km, LC)
SFP-GE-LH100-SM1550	1000BASE-LH100 SFP Transceiver, Single Mode (1550nm, 100km, LC)
SFP-GE-LX10-SM1310	1000BASE-LX10 SFP Transceiver, Single Mode (1310nm, 10km, LC, -40~80°C)
SFP-GE-LH20-SM1310-I	SFP 1000BASE Optical Transceiver Module(-40°C to 85°C,1310nm,20km,LC)
SFP-GE-LH40-SM1310-I	SFP 1000BASE Optical Transceiver Module(-40°C to 85°C,1310nm,40km,LC)
SFP-XG-LX-SM1310-E	SFP+ Module(1310nm,10km,LC)
SFP-XG-SX-MM850-E	SFP+ Module(850nm,300m,LC)
LSWM1STK	SFP+ Cable 0.65m
LSWM2STK	SFP+ Cable 1.2m
LSWM3STK	SFP+ Cable 3m
LSTM1STK	SFP+ Cable 5m
CAB-CON-1.8m	Single Cable,Console Serial Port Cable,1.8m,D9F,28UL20276(4P)(P296U),MPH-8P8C
SFP-STACK-Kit	SFP Stacking Cable (150cm,including two 1000BASE-T SFP module and one stacking cable)



The Leader in Digital Solutions

### New H3C Technologies Co., Limited

Beijing Headquarters

Tower 1, LSH Center, 8 Guangshun South Street, Chaoyang District, Beijing, China

Zip: 100102

Hangzhou Headquarters

No.466 Changhe Road, Binjiang District, Hangzhou, Zhejiang, China

Zip: 310052

Tel: +86-571-86760000

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